REDACTED VERSION

Incident Action Plan

(b) (6) [redacted] Mitigation and Cleanup

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

TEXAS COMMISSON ON ENVIRONMENTAL QUALITY

CITY OF AMARILLO

OPEN SPACES · ENDLESS POSSIBILITIES

January 3, 2017 – January 6, 2017

08:00 – 17:00 Daily

9828536

INCIDENT OBJECTIVES (ICS 202)

1. Incident Name:	2. Operational Period: Date From: 1-3-2017 Time From: 08:00	Date To: 1-6-2017 Time To: 17:00
(b) (6) Mitigation and Cleanup		

3. Objective(s):

- Provide safe working environment for all involved persons on scene
- Provide security and accountability for scene to ensure proper personnel have access
- Create containment and isolation area for product cleanup and storage
- Create and develop cleanup plan to include air monitoring
- Monitor throughout operational period
- Provide decontamination
- Identify and Decontaminate affected property
- Establish and maintain scene control
- Remediate chemical contamination - Including Benzene
- City of Amarillo Officials will make final decision for habitation of residence

4. Operational Period Command Emphasis:

- Scene Safety for personnel working in the affected location
- Safety for general public and residence in the immediate area
- Containment of product

General Situational Awareness

- Weather will be cool to cold
- Moisture causes product release

5. Site Safety Plan Required? Yes ☐ No ☐

Approved Site Safety Plan(s) Located at:

6. Incident Action Plan (the items checked below are included in this Incident Action Plan):

				Other Attachments:
☑	ICS 202	☑	ICS 206	☑ MSDS
☑	ICS 203	☐	ICS 207	☐
☑	ICS 204	☑	ICS 208	☐
☐	ICS 205	☑	Map/Chart	☐
☑	ICS 205A	☑	Weather Forecast/Tides/Currents	☐

7. Prepared by: Name: Justin Davis Position/Title: PSC Signature: _____

8. Approved by Incident Commander: Name: _____ Signature: _____

ICS 202	IAP Page ____	Date/Time: _____

Shane Enders

ORGANIZATION ASSIGNMENT LIST (ICS 203)

1. Incident Name:	2. Operational Period: Date From: 1-3-2017 Date To: 1-6-2017 Time From: 08:00 Time To: 17:00
(b) (6) Mitigation and Cleanup	

3. Incident Commander(s) and Command Staff:	
IC/UCs	Jhana Enders
	Davis Durst
	Shaun May
Deputy	Eddy Vance
Safety Officer	Shaun May
Public Info. Officer	Jesse Patton
Liaison Officer	Chip Orton

4. Agency/Organization Representatives:	
Agency/Organization	Name

5. Planning Section:	
Chief	Capt. Justin Davis, AFD
Deputy	Brad Britten
Resources Unit	
Situation Unit	
Documentation Unit	
Demobilization Unit	
Technical Specialists	
Deputy	Elton Butcher

6. Logistics Section:	
Chief	
Deputy	
Support Branch	
Director	
Supply Unit	
Facilities Unit	
Ground Support Unit	
Service Branch	
Director	
Communications Unit	
Medical Unit	
Food Unit	

7. Operations Section:		
Chief	Gary Smith	
Deputy		
Staging Area	Matthew Shockey	
Branch	Police	
Branch Director	Lt. Gary Trupe	
Deputy		
Division/Group		
Division/Group		
Division/Group		
Division/Group		
Division/Group		
Branch	Fire	
Branch Director	Jason Mayes	
Deputy		
Division/Group		
Division/Group		
Division/Group		
Division/Group		
Division/Group		
Branch		
Branch Director		
Deputy		
Division/Group		
Division/Group		
Division/Group		
Division/Group		
Division/Group		
Air Operations Branch		
Air Ops Branch Dir.		

8. Finance/Administration Section:	
Chief	
Deputy	
Time Unit	
Procurement Unit	
Comp/Claims Unit	
Cost Unit	

9. Prepared by: Name: Justin Davis	Position/Title: PSC	Signature:
ICS 203	IAP Page 3	Date/Time:

ASSIGNMENT LIST (ICS 204)

1. Incident Name:	2. Operational Period:		3.
(b) (6) Mitigation and Cleanup	Date From: 1-3-2017	Date To: 1-6-2017	Branch: Hazmat
	Time From: 08:00	Time To: 17:00	Division:
			Group:
			Staging Area:

4. Operations Personnel: Name / Contact Number(s)

Operations Section Chief: Gary Smith SWS Enviromental

Branch Director:

Division/Group Supervisor:

5. Resources Assigned:

Resource Identifier	Leader	# of Persons	Contact (e.g., phone, pager, radio frequency, etc.)	Reporting Location, Special Equipment and Supplies, Remarks, Notes, Information
Entry/Recon	Gary Smith	as need		

6. Work Assignments:

Recon Property to assess needs and actions.

Entry will be made in accordance with SWS Enviromental policies and procedures.

7. Special Instructions:

Stay safe, operate smart

8. Communications (radio and/or phone contact numbers needed for this assignment):

Name/Function	Primary Contact: indicate cell, pager, or radio (frequency/system/channel)
/	
/	
/	
/	

9. Prepared by: Name: Justin Davis Position/Title: PSC Signature:

ICS 204	IAP Page 4	Date/Time:

ASSIGNMENT LIST (ICS 204)

1. Incident Name:	2. Operational Period:		3.
(b) (6) Mitigation and Cleanup	Date From: 1-3-2017	Date To: 1-6-2017	Branch: Police
	Time From: 08:00	Time To: 17:00	Division:
			Group:
			Staging Area:

4. Operations Personnel: Name / Contact Number(s)

Operations Section Chief: Lt Gary Trupe APD

Branch Director:

Division/Group Supervisor:

5. Resources Assigned:

Resource Identifier	Leader	# of Persons	Contact (e.g., phone, pager, radio frequency, etc.)	Reporting Location, Special Equipment and Supplies, Remarks, Notes, Information
	Assigned as needed	as need		

6. Work Assignments:

Scene security.

7. Special Instructions:

Stay safe, operate smart

8. Communications (radio and/or phone contact numbers needed for this assignment):

Name/Function	Primary Contact: indicate cell, pager, or radio (frequency/system/channel)
/	
/	
/	
/	

9. Prepared by: Name: Justin Davis Position/Title: PSC Signature:

ICS 204	IAP Page 5	Date/Time:

COMMUNICATIONS LIST (ICS 205A)

1. Incident Name:	2. Operational Period: Date From: 1-3-2017	Date To: 1-6-2017
(b) (6) Mitigation and Cleanup	Time From: 08:00	Time To: 17:00

3. Basic Local Communications Information:

Incident Assigned Position	Name (Alphabetized)	Method(s) of Contact (phone, pager, cell, etc.)
Incident Command Unified	Jhana Enders - US EPA	214-789-9654, ENDERS.JHANA@EPA.gov
Incident Command Unified	David Durst - TCEQ	806-570-5013, david.durst@tecq.texas.gov
Incident Command Unified	Eddy Vance - TECQ	806-670-2598, eddy.vance@tecq.texas.gov
Planning Section Chief	Justin Davis - AFD	806-676-2896, justin.davis@amarillo.gov
Operations	Gary Smith - SWS Enviromental	817-829-5302, gsmith@swses.com
Staging area	Matthew Shockey - SWS Enviro.	817-829-8855, mshockey@swses.com
Tech	Cameron Enders	SWS Enviromental
Tech	Cody Wilson	SWS Enviromental
Tech	Jeffery Juerez	SWS Enviromental
	Jose Ojeda - EPA	
	Sean Hettinger - EPA	
	Oscar Garcia - EPA	956-909-4311
Incident Unified Command	Shaun May - Enviromental Health	850-787-1778, shaun.may@amarillo.gov
Public Information Officer	Jesse Patton	806-881-8235, jesse.patton@amarillo.gov
Liaison Officer	Chip Orton - EMC COA	806-333-4800, chip.orton@amarillo.gov
Deputy PSC	Brad Britten	806-683-4481, brad.britten@amarillo.gov
Amarillo Police Department	Lt. Gary Trupe	806-678-3975, gary.trupe@amarillo.gov
Amarillo Fire Department	District Chief Jason Mayes	806-681-9534, jason.mayes@amarillo.gov

4. Prepared by: Name: Justin Davis	Position/Title: PSC	Signature:
ICS 205A	IAP Page 6	Date/Time:

MEDICAL PLAN (ICS 206)

1. Incident Name:	2. Operational Period: Date From: 1-3-2017 Date To: 1-6-2017
(b) (6) Mitigation and Cleanup	Time From: 08:00 Time To: 17:00

3. Medical Aid Stations:

Name	Location	Contact Number(s)/Frequency	Paramedics on Site?
			☐ Yes ☐ No
			☐ Yes ☐ No
			☐ Yes ☐ No
			☐ Yes ☐ No
			☐ Yes ☐ No
			☐ Yes ☐ No

4. Transportation (indicate air or ground):

Ambulance Service	Location	Contact Number(s)/Frequency	Level of Service
AMS		911	☑ ALS ☐ BLS
			☐ ALS ☐ BLS
			☐ ALS ☐ BLS
			☐ ALS ☐ BLS

5. Hospitals:

Hospital Name	Address, Latitude & Longitude if Helipad	Contact Number(s)/ Frequency	Travel Time		Trauma Center	Burn Center	Helipad
			Air	Ground			
NWTH	1501 S Coulter Amarillo, TX	(806) 351-6933	5	10	☑ Yes Level: 2 ☐ No	☐ Yes ☐ No	☑ Yes ☐ No
BSA	1600 Wallace Amarillo, TX	(806) 212-5750		10	☑ Yes Level:____ ☐ No	☐ Yes ☐ No	☐ Yes ☑ No
					☐ Yes Level:____ ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
					☐ Yes Level:____ ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
					☐ Yes Level:____ ☐ No	☐ Yes ☐ No	☐ Yes ☐ No

6. Special Medical Emergency Procedures:

In case of an emergency, contact the Incident Command .
Incident Command will notify proper agency (s) for situation.

☐ Check box if aviation assets are utilized for rescue. If assets are used, coordinate with Air Operations.

7. Prepared by (Medical Unit Leader): Name: Capt Justin Davis, PSC Signature: _____

8. Approved by (Safety Officer): Name: _____ Signature: _____

ICS 206	IAP Page 7	Date/Time: _____

SAFETY MESSAGE/PLAN (ICS 208)

1. Incident Name:	2. Operational Period: Date From: 1-3-2017	Date To: 1-6-2017
(b) (6) Mitigation and Cleanup	Time From: 08:00	Time To: 17:00

3. Safety Message/Expanded Safety Message, Safety Plan, Site Safety Plan:

- Maintain assigned isolation perimeter
- Use appropriate PPE and Respiratory protection
- Do not come into direct contact with chemical, SKIN CONTACT HAZARD
- No entry into residence without PPE until monitoring meets EPA requirements
- RESPIRATORY HAZARD!
- Review exposure signs and symptoms prior to and after entry
- Caution there will be Temperature Extremes
- Use appropriate medical monitoring
- Review MSDS

4. Site Safety Plan Required? Yes ☐ No ☐

Approved Site Safety Plan(s) Located At:

5. Prepared by: Name: Elton Butcher Position/Title: DPSC Signature: EB

ICS 208	IAP Page 8	Date/Time:

Notice of NWS' New Version of Forecast
A new version of Forecast will launch March 7, 2017.
Click here to visit the new site for details.

NATIONAL WEATHER SERVICE

Heavy rain and mountain snow for parts of the West this week

A series of Pacific storm systems will bring a prolonged period of heavy precipitation to parts of the West this week. Very heavy snow - measured in feet - will fall from the Sierra to the Great Basin, while heavy rain is expected in coastal sections of California and the Pacific Northwest. Flooding will be a concern by later this week into the weekend as additional storms come ashore. Read More >

Hazardous Weather Conditions

- Special Weather Statement

En Español Share

Current conditions at
Amarillo, Amarillo International Airport (KAMA)
Lat: 35.22°N Lon: 101.72°W Elev: 3606ft.

Fair
32°F
0°C

Humidity	52%
Wind Speed	N 16 mph
Barometer	30.16 in (1022.5 mb)
Dewpoint	16°F (-9°C)
Visibility	10.00 mi
Wind Chill	21°F (-6°C)
Last update	3 Jan 3:53 pm CST

Extended Forecast for
2 Miles NNW Amarillo TX

Tonight	Wednesday	Wednesday Night	Thursday	Thursday Night	Friday	Friday Night	Saturday	Saturday Night
				 40%	 40%			
Mostly Cloudy	Partly Sunny	Mostly Cloudy	Partly Sunny	Chance Snow	Chance Snow	Partly Cloudy	Mostly Sunny	Mostly Clear
Low: 16 °F	High: 48 °F	Low: 14 °F	High: 26 °F	Low: 13 °F	High: 29 °F	Low: 13 °F	High: 39 °F	Low: 20 °F

Detailed Forecast

Tonight
Mostly cloudy, with a low around 16. Wind chill values between 5 and 10. North northeast wind around 10 mph becoming southeast after midnight.

Wednesday
Partly sunny, with a high near 48. Wind chill values between 3 and 13 early. South wind 15 to 20 mph.

Wednesday Night
Mostly cloudy, with a low around 14. Wind chill values between zero and 10. South wind 15 to 20 mph becoming north after midnight.

Thursday
Partly sunny, with a high near 26. Wind chill values between -3 and 7. Northeast wind 15 to 20 mph.

Thursday Night
A 40 percent chance of snow. Mostly cloudy, with a low around 13. Northeast wind 10 to 15 mph.

Friday
A 40 percent chance of snow. Partly sunny, with a high near 29. East southeast wind 10 to 15 mph.

Friday Night
Partly cloudy, with a low around 13. East southeast wind around 10 mph becoming west southwest after midnight.

Saturday
Mostly sunny, with a high near 39. West southwest wind around 10 mph becoming south southeast in the afternoon.

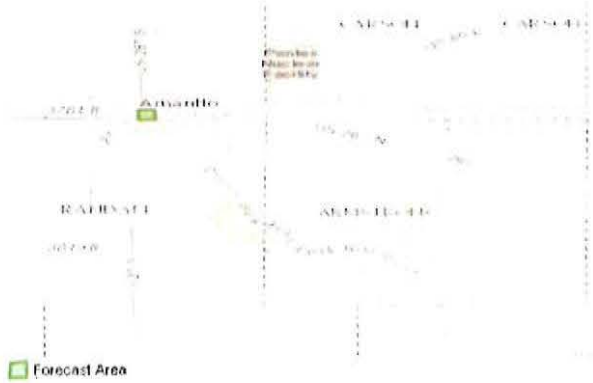
Saturday Night
Mostly clear, with a low around 20. South wind 5 to 10 mph.

Sunday
Sunny, with a high near 48.

Sunday Night
Mostly clear, with a low around 29.

Monday
Sunny, with a high near 64.

Monday Night
Partly cloudy, with a low around 39.



Forecast Area

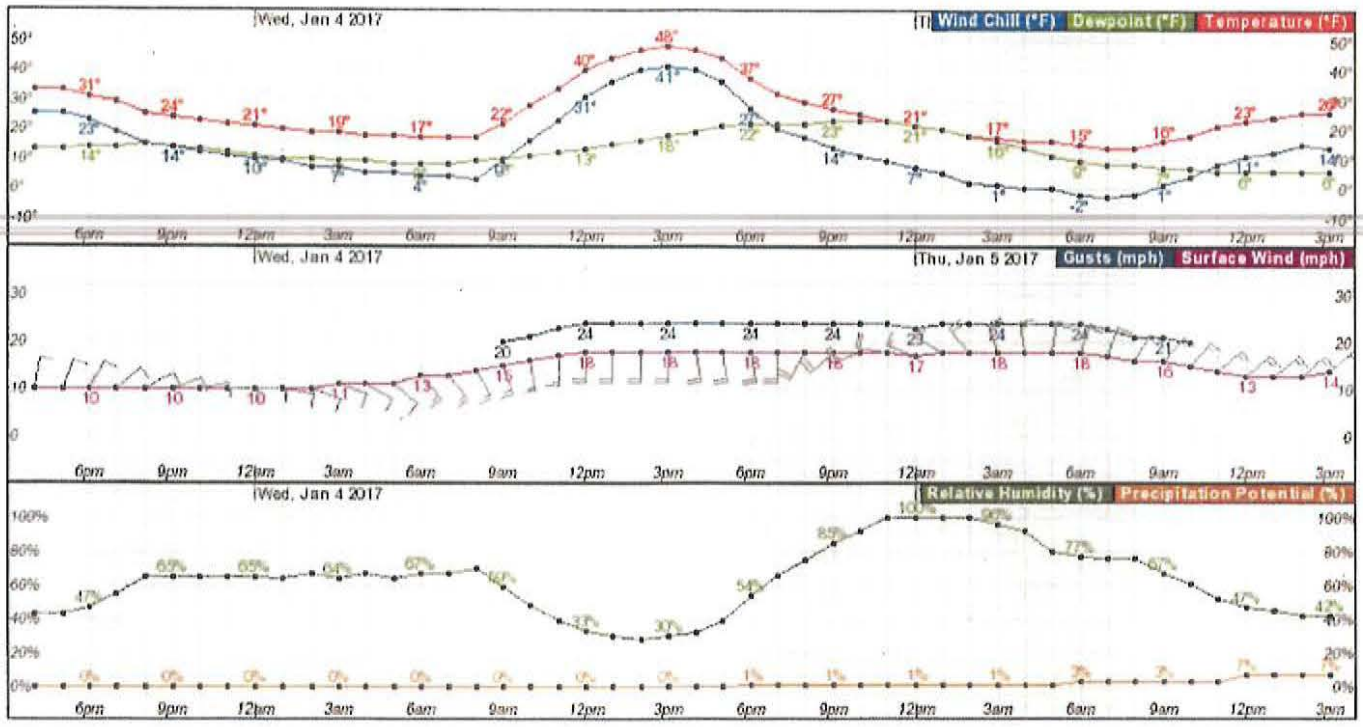
Point Forecast:
2 Miles NNW Amarillo TX
35.2°N 101.82°W (Elev. 3645 ft)

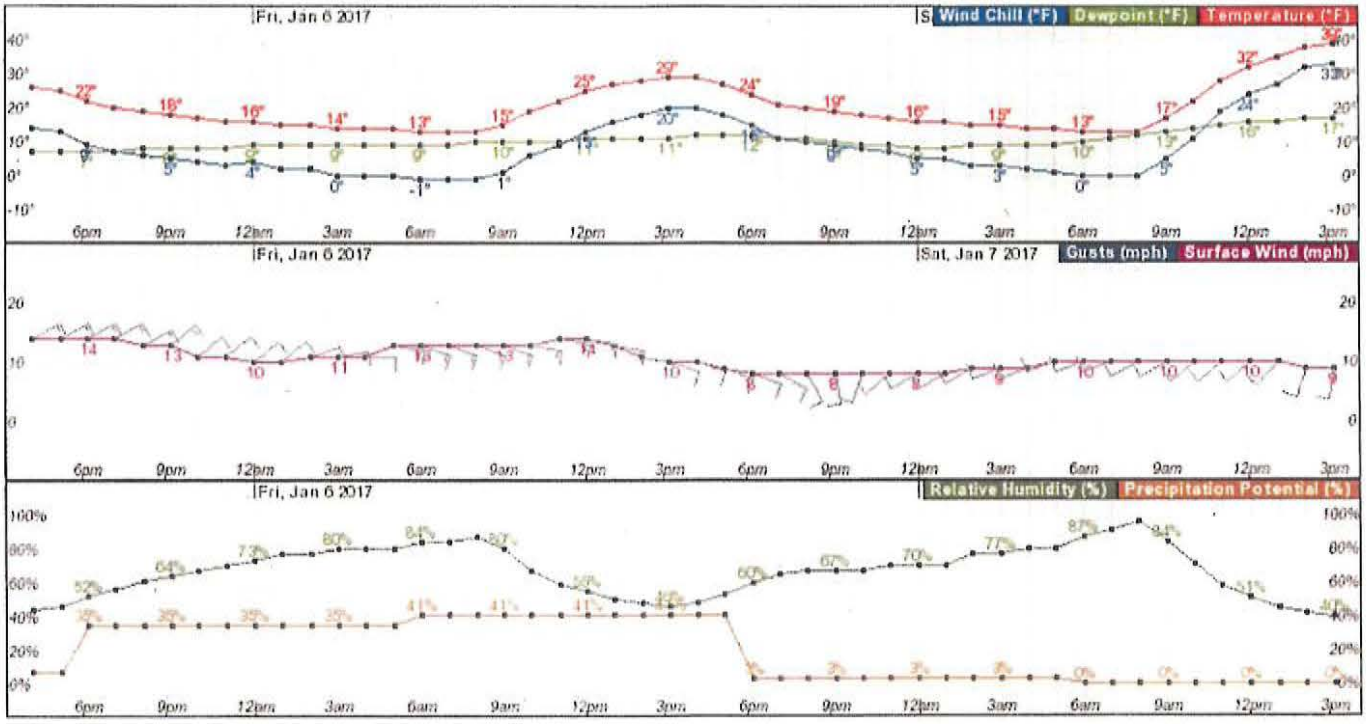
Last Update:
2:35 pm CST Jan 3, 2017

Forecast Valid:
4pm CST Jan 3, 2017-6pm CST Jan 10, 2017

Additional Resources

Radar & Satellite Image


Wed, Jan 4 2017
Wind Chill (°F)
Dewpoint (°F)
Temperature (°F)
Wed, Jan 4 2017
Thu, Jan 5 2017
Gusts (mph)
Surface Wind (mph)
Wed, Jan 4 2017
Relative Humidity (%)
Precipitation Potential (%)


Fri, Jan 6 2017
Wind Chill (°F)
Dewpoint (°F)
Temperature (°F)
Fri, Jan 6 2017
Sat, Jan 7 2017
Gusts (mph)
Surface Wind (mph)
Fri, Jan 6 2017
Relative Humidity (%)
Precipitation Potential (%)

Amarillo, TX [ORG] / *Amarillo OEM [GROUP] /

01/02/2017 - Hazmat - (b) (6) [ROOM]

(b) (6)

Current Time 10:20:54

Amarillo Potter Randall OEM has secured from the scene

Messages

United Phosphorus, Inc.

Preparation Date 10-May-2015 **Revision date** 10-May-2015 **Revision Number:** 1

1. Identification of the Substance/Preparation and of the Company/Undertaking

Product identifier

Product Description: WEEVIL-CIDE® Tablets, WEEVIL-CIDE® Pellets

Other means of identification

Item#:	12U-142
UN-No	UN1397
Synonyms	Not Available
Registration number(s)	70506-13; 70506-14

Recommended use of the chemical and restrictions on use

Recommended use	Restricted Use Pesticide. The use of his product is STRICTLY PROHIBITED on single family and multi-family residential properties, nursing homes, schools (except athletic fields) , daycare facilities and hospitals.
Uses advised against	Activties contrary to label recomendation Non labeled activities

Details of the Supplier of the Safety Data Sheet

Supplier Address
UPI
630 Freedom Business Center
Suite 402
King of Prussia, PA 19406

Emergency telephone number

Company Phone Number	1-800-438-6071
Emergency telephone number	Chemtrec: (800) 424-9300 (24hrs) or (703) 527-3887 Medical: Rocky Mountain Poison Control Center (866) 673-6671 (24hrs)

2. Hazards Identification

Classification

OSHA Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 2
Acute toxicity - Inhalation (Gases)	Category 1
Acute toxicity - Inhalation (Vapors)	Category 1

Label elements

EMERGENCY OVERVIEW

DANGER

hazard statements
Fatal if inhaled
FATAL IF SWALLOWED
Harmful in contact with skin

appearance light grey to Greenish

Physical state solid Pellet/tablet

Odor Garlic like Pure phosphine gas is odorless but a garlic odor might be detected due to a contaminant. Since odor may not be detected under certain circumstances, the absence of a garlic odor does not mean that phosphine gas is absent.

Precautionary Statements - Prevention
Do not eat, drink or smoke when using this product
Do not handle until all safety precautions have been read and understood
Protect from moisture
Wear eye/face protection
Wear protective gloves
Wash hands thoroughly after handling

IF INHALED
Immediately call a POISON CENTER or doctor/physician
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
Rinse mouth

Precautionary Statements - Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal
Refer to manufacturer/supplier for information on recovery/recycling

Hazards Not Otherwise Classified (HNOC)
OTHER INFORMATION
- Very toxic to aquatic life
- May be harmful in contact with skin

3. Composition/information on Ingredients

Chemical name	CAS-No	Weight %	Trade secret
Aluminum phosphide	20859-73-8	60	

If CAS number is "proprietary", the specific chemical identity and percentage of composition has been withheld as a trade secret.

4. First aid measures

FIRST AID MEASURES

Eye contact Hold eye open and rinse slowly and gently with water for 15 - 20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Immediate medical attention is required.

Skin contact Brush or shake off material. Wash contaminated skin with soapy water in a well ventilated area.
Do not leave contaminated clothing in occupied or confined areas such as car or van.

	Brush or shake off clothes. Allow clothes to aerate prior to laundering. Remove and wash contaminated clothing before re-use.
Inhalation	Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Keep warm and make sure person can breathe freely.
Ingestion	Call a physician or poison control center immediately. Do not induce vomiting without medical advice. Vomiting may off-gas and release phosphine, which could pose a risk of secondary contamination. Never give anything by mouth to an unconscious person.
Protection of First-aiders	Use personal protective equipment.

Most Important Symptoms and Effects, Both Acute and Delayed

Most Important Symptoms and Effects	Headache. Dizziness. Nausea. Difficulty in breathing. Diarrhea.

Indication of Any Immediate Medical Attention and Special Treatment Needed

Notes to physician	Aluminim phosphide- This product reacts with moisture from air, water, acids and many other liquids to release hydrogen phosphide (phosphine) gas. Symptoms of severe poisoning may occur within a few hours to several days. Phosphine poisoning may result in; pulmonary edema, liver elevated serum GOT, LDH and alkaline phosphatase, reduced prothrombin, hemmorhage and jaundice, and kidney hematuria and anauria. Pathology is characterized by hypoxia. Mild inhalation exposure causes malaise, ringing of ears, fatigue, nausea, and pressure in the chest, which is relieved by removal to fresh air. Moderate poisoning causes weakness, vomiting, and pain just above the stomach, chest pain, diarrhea and dyspnea. Symptoms of severe poisoning may occur within a few hours to several days, resulting in pulmonary edema and may lead to dizziness, cyanosis, unconsciousness and death. In sufficient quantity, phosphine affects the liver, kidneys, lungs, nervous system, and circulatory system. Inhalation can cause lung edema, and hyperemia. Ingestion can cause lung and brain symptoms but damage to the viscera is more common. Phosphine poisoning may result in (1) pulmonary edema, (2) liver elevated serum GOT, LDH and alkaline phosphatase, reduced prothrombin, hemorrhage and jaundice and (3) kidney hematuria and anuria. Pathology is characterized by hypoxia. Frequent exposure to subacute concentrations over a period of days or weeks may cause poisoning. Treatment is symptomatic.

5. Fire-fighting measures

Suitable extinguishing media

Carbon dioxide (CO2). Water. Foam.

Aluminum phosphide is not flammable; however, it reacts with water to produce hydrogen phosphide (phosphine) gas which may ignite spontaneously at concentrations above the LE of 1.8% v/v.

Unsuitable extinguishing media Water.

Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating gases and vapours.

Aluminum phosphide: Hydrogen phosphide (phosphine)/air mixtures at concentrations above the lower flammable limit may ignite spontaneously. Ignition of high concentrations of hydrogen phosphide can produce a very energetic reaction. Explosions can occur under these conditions and may cause personal injury. NEVER allow build up of hydrogen phosphide to exceed explosive concentrations. Containers of metal phosphides should be opened in open air and never in a flammable atmosphere. Do not confine spent or partially spent dust as slow release of hydrogen phosphide may result in formation of an explosive atmosphere. Spontaneous ignition may occur if large quantities of aluminum phosphide are piled in contact with liquid water. Fires containing metal phosphides or hydrogen phosphide will produce phosphoric acid by the following reaction: $2PH_3 + 4O_2 = H_2O + P_2O_5 = 2H_3PO_4$.

Hazardous combustion products Phosphine gas.

Explosion data

Protective equipment and precautions for firefighters

Use personal protective equipment. As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal Precautions	Avoid contact with the skin and the eyes. An accidental spill/release of material may produce high levels of gas. A NIOSH/MSHA approved full face gas mask with phosphine cartridge of SCBA must be employed during wet deactivation of partially spent material. Wear protective gloves and clothing. Wear protective gloves/clothing and eye/face protection.

Environmental Precautions

Environmental precautions	Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinenet environmental permits.

Methods and material for containment and cleaning up

Methods for Clean-Up	Damaged aluminum foil pouches should be transferred to a sound dry metal cotainer and immediately seal and properly label as aluminum phosphide. Do not use water at any time during clean-up. Damaged aluminum flasks should be transferred to a sound dry metal container and immediately seal and properly label as aluminum phosphide.

7. Handling and Storage

Precautions for safe handling

Handling	Use of this product is STRICTLY PROHIBITED on single and multifamily residential properties and nursing homes, schools (except athletic fields) daycare facilities and hospitals. Keep out of reach of children. Do not eat, drink or smoke when using this product. Remove all sources of ignition. Wear personal protective equipment. It is recommended that the gas-tight, aluminum flask be opened in open air or near a fan, which exhausts outside immediately. Never open in a flammable atmosphere as the product may, although rare, flash. When opening, point container away from the face and body. These precautions will reduce the applicators potential for exposure to hydrogen phosphide (phosphine) gas. Do not expose product to atmospheric moisture any longer than is necessary.

Conditions for safe storage, including any incompatibilities

Storage	Keep out of the reach of children. Protect from moisture. Store in original container.
incompatible materials	Water. Hydrogen phosphide may react with certain metals (gold, silver, brass, other precious metals and their alloys) and cause corrosion especially at high temperatures and relative humdities. Small electric detectors, brass sprinkler hoads, batteries and battery chargers, forklifts, temperature monitoring systems, electrical switch gear, communication devices, computers, calculators, watches and other electronic equipments shoul dbe protected or removed before fumigation.

8. Exposure Controls/Personal Protection

Exposure guidelines	This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.
Engineering controls	Ensure adequate ventilation, especially in confined areas. Measurements of the concentration Aluminium phosphide in the air must be provided and used to verify the

concentration in the atmosphere.

Personal protective equipment

Eye/Face Protection	Use eye protection to avoid eye contact. Where there is potential for eye contact have eye flushing equipment available. Safety glasses with side-shields.
Skin protection	Wear protective gloves/clothing. Socks and footwear.
Respiratory protection	A NIOSH/MESA approved full face mask with approved canister for phosphine may be employed for concentrations up to 15 ppm. At concentrations above that level, or when concentrations are unknown, NIOSH/MESA approved SCBA or equivalent must be worn.

General hygiene considerations

Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing before re-use. Wear suitable gloves and eye/face protection. Wash hands before breaks and immediately after handling the product.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state	solid Pellet/tablet		
appearance	light grey to Greenish	Odor	Garlic like Pure phosphine gas is odorless but a garlic odor might be detected due to a contaminant. Since odor may not be detected under certain circumstances, the absence of a garlic odor does not mean that phosphine gas is absent.
color	No information available		

Property	VALUES	Remarks/ • Method
pH	No information available	
Melting point/freezing point	No information available	
Boiling Point/Range	No information available	
Flash Point		
Evaporation Rate	No information available	
flammability (solid, gas)	No information available	
Flammability limit in air		
Upper Flammability Limit	No information available	
Lower Flammability Limit	No information available	
vapor pressure	No information available	
Vapor Density	No information available	
Specific gravity	2.85	
Water solubility	No information available	
Solubility in Other Solvents	No information available	
Partition coefficient: n-octanol/water	No information available	
Autoignition temperature	No information available	
decomposition temperature	No information available	
Viscosity, kinematic	No information available	
Dynamic viscosity	No information available	
Explosive properties	No information available	
Oxidizing properties	No information available	

OTHER INFORMATION

Softening point	No information available
molecular weight	No information available
VOC Content	No information available

density	No information available
Bulk density	No information available

10. Stability and Reactivity

Reactivity
Water reactive

Chemical stability
Stable under recommended storage conditions.
Reacts with water to form hydrogen phosphide (phosphine) gas.
Possibility of hazardous reactions
None under normal processing.
Hazardous polymerization Hazardous polymerisation does not occur.

Conditions to avoid
Exposure to moisture. Protect from water.
Incompatible materials
Water. Hydrogen phosphide may react with certain metals (gold, silver, brass, other precious metals and their alloys) and cause corrosion especially at high temperatures and relative humdities. Small electric detectors, brass sprinkler heads, batteries and battery chargers, forklifts, temperature monitoring systems, electrical switch gear, communication devices, computers, calculators, watches and other electronic equipments shoul dbe protected or removed before fumigation.
Hazardous decomposition products
Phosphine gas.

11. Toxicological Information

Information on Likely Routes of Exposure

Inhalation	Respiratory, gastrointestinal, and nervous system symptoms were noted in workers exposed to mean phosphine concentrations less than 10 ppm.
Eye contact	Irritating to eyes.
Skin contact	Reacts, PH3 generated is slighlly soluble.
Ingestion	MAY BE FATAL IF SWALLOWED.
Component Information	Aluminum phosphide - Acute oral LD50 = 11.5 mg/kg Acute dermal LD50 = >5,000 mg/kg (1 hr exposure) Sensitization = Not a sensitizer Hydrogen phosphide (phosphine) gas - Inhalation = LC50 190 ppm (1 hour)

Information on Toxicological Effects

Symptoms	No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

sensitization	No information available.
Mutagenic effects	No information available.
Carcinogenicity	Aluminum phosphide: Chronic effects = Not expected to produce target organ effects Mutagenicity = No data Carcinogenicity = Not classified as a carcinogen by IARC, OSHA, or NTP Reproductive and Developmental Effects = Not expected to produce reproductive or developmental effects. Hydrogen phosphide (phosphine) gas - Chronic effects = In a 2-year study, rats were exposed to 48-90 g/m³ of feed and no overt systemic toxicity was noted. Mutagenicity = Increased frequency of cells with structural chromosomal aberrations noted

in an invitro cytogenetic assay with Chinese hamster ovary cells.
Carcinogenicity = Not classified as a carcinogen by IARC, OSHA or NTP
Reproductive and developmental effects = Not expected to product reproductive or developmental effects.

Reproductive effects	Not Available.
STOT - Single Exposure	No information available.
STOT - repeated exposure	No information available.
Target organ effects	Respiratory System, EYES, skin.
Aspiration hazard	No information available.

Numerical Measures of Toxicity - Product information

mg/l	
LD50 Oral	11.5 mg/kg (rat)
LD50 Dermal	> 5000 mg/kg (rat)
LC50 Inhalation:	Inhalation LC50 190 ppm

12. Ecological Information

ecotoxicity

Highly toxic to wildlife

Persistence/Degradability
No information available.

Bioaccumulation/ Accumulation
Does not bioaccumulate.

Other Adverse Effects
No information available

13. Disposal Considerations

Waste Treatment Methods

Waste Disposal Method Follow label for proper disposal instructions.

Contaminated packaging Refer to product label.

Chemical name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Aluminum phosphide	P006			

Chemical name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
Aluminum phosphide		P006		

14. Transport Information

DOT

Aluminum flasks are covered under DOT special permit DOT -SP 13307
the following description is to be used:
UN3048
Aluminum phosphide
6.1
PG I
When shipped in cases the following description is to be used:

UN-No	UN1397

Hazard class	4.3
Subsidiary class	6.1
Packing group	PG I
Reportable Quantity (RQ):	100 lbs

TDG

ICAO

UN-No	1397
Proper shipping name	Aluminum phosphide
Hazard class	4.3
Subsidiary class	6.1
Packing group	PG I

IATA

UN-No	1397
Proper shipping name	Aluminum phosphide
Hazard class	4.3
Subsidiary class	6.1
Packing group	PG I

IMDG/IMO

UN-No	1397
Proper shipping name	Aluminum phosphide
Hazard class	4.3
Subsidiary class	6.1
Packing group	PG I
EmS No.	F-G, S-N

15. Regulatory Information

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

signal word	DANGER!
Ventilation Control	PESTICIDE APPLICATORS & WORKERS THESE WORKERS MUST REFER TO PRODUCT LABELING AND DIRECTIONS FOR USE IN ACCORDANCE WITH EPA WORKER PROTECTION STANDARD 40 CFR PART 170.

Restricted Use Pesticide. Due to inhalation toxicity of phosphine gas. Keep out of Reach of Children. May be fatal if swallowed. May be fatal if inhaled. Toxic to wildlife.
The use of this product is STRICTLY PROHIBITED on single family and multi family residential properties, nursing homes, schools (except athletic fields), daycare facilities and hospitals.
Granules or dust can be fatal if swallowed. When sealed container is opened, allowing material to come in contact with moisture, water or acids, toxic phosphine gas will be released. Phosphine may ignite spontaneously at levels above its lower flammable limit of 1.8% v/v, it is important not to exceed this concentration. Ignition of high concentrations of phosphine can produce a very energetic reaction. NEVER ALLOW build up of phosphine to exceed concentrations. Do not confine spent or partially spent granules, as the slow release of phosphine may result in formation of an explosive atmosphere. Opening pouches in open air may produce a flash due to phosphine build up.

International Inventories

USINV	Not determined
DSL/NDSL	Not determined
EINECS/ ELINCS	Complies

ENCS	Does not comply
China	Complies
KECL	Complies
PICCS	Complies
AICS	Complies
TSCA	Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and and Title 40n of the Code of Federal Regulations, Part 372:

Chemical name	SARA 313 - Threshold Values
Aluminum phosphide - 20859-73-8	1.0

SARA 311/312 Hazardous Categorization

Acute health hazard	yes
Chronic health hazard	NO
Fire hazard	yes
Sudden release of pressure hazard	No
Reactive Hazard	yes

Chemical name	RQ	CERCLA EHS RQs	RQ
Aluminum phosphide 20859-73-8	100 lb	100 lb	RQ 100 lb final RQ RQ 45.4 kg final RQ

CERCLA

Component	RQ
Aluminum phosphide 20859-73-8 (60)	100 lb

SARA Product RQ 0

Component	CERCLA EHS RQs
Aluminum phosphide 20859-73-8 (60)	100 lb

RCRA

Component	RCRA - D Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Aluminum phosphide 20859-73-8 (60)		P008	

Pesticide Information

Component	FIFRA - Restricted Use	FIFRA - Pesticide Product Other Ingredients	FIFRA - Listing of Pesticide Chemicals	California Pesticides - Restricted Materials
Aluminum phosphide 20859-73-8 (60)	Under further evaluation as sole active ingredient for agricultural crop uses No mixtures registered.		X	

State Regulations

State Right-to-Know

Chemical name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Aluminum phosphide	X	X	X		

International regulations

U.S. EPA Label information

EPA Pesticide registration number 70506-13 & 70506-14

16. Other Information

NFPA **HEALTH** 3 **flammability** 4 **Instability** 0 **Physical hazard** -

Preparation Date 10-May-2015
Revision date 10-May-2015
Revision Summary
Update to GHS format

End of MSDS